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Coming Closer? Tax Morale, Deterrence and Social Learning after German Unification

Lars P. Feld, Benno Torgler, and Bin Dong*

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Abstract:

The paper explores whether a social learning model helps explain the observed conformity and compliance with social norms after the unification of Germany. We compare tax morale, (the willingness to pay taxes), between inhabitants of East and West Germany during the post-unification period, using three World Values Survey/European Values Survey waves between 1990 and 1999. German unification is of particular interest in analyzing tax morale since it is close to a quasi-natural experiment. Factors such as a common language, similar education systems and a shared cultural and political history prior to the separation after the Second World War can be controlled because they are similar. Our findings indicate that the social learning model employed in this study helps to predict the development of tax morale over time. It is clear that tax morale values converged within a mere nine years after unification, due largely to a strong change in the level of tax morale in the East. Thus, the paper contributes to the literature that attempts to explain how norms arise, how they are maintained and how they are changed.

JEL Classifications: H26, H73, D78, C93

Keywords: Tax Morale, Social Learning, Conformity, Convergence Process, Deterrence, Quasi-Natural Experiment.

* Lars P. Feld, University of Heidelberg, Alfred-Weber-Institute, Chair of Public Economics, Grabengasse 14, D-69117 Heidelberg, University, Germany, email: lars.feld@awi.uni-heidelberg.de. Benno Torgler, Queensland University of Technology, School of Economics and Finance, GPO Box 2434, Brisbane QLD 4001, Australia, email: benno.torgler@qut.edu.au. Bin Dong, Queensland University of Technology, School of Economics and Finance, GPO Box 2434, Brisbane QLD 4001, Australia. We would like to thank Andreas Schmidt (University of Cologne) for valuable research assistance in collecting the data on fines and auditing in (West and East) Germany, and Birger Nerré, Doris Aebi, Alison Macintyre, Jan Schnellenbach, and participants of the 2006 National Tax Association Conference in Boston for helpful comments and suggestions with regard to a previous version.

I. INTRODUCTION

According to the seminal paper by Allingham and Sandmo (1972), tax morale is one of the factors *explaining* tax compliance. Deterrence is considered as the main cost related factor of tax evasion, while income and marginal tax rates determine the benefits of non-compliance. Further, tax morale is interpreted as comprising different social norms that shape individual behavior. These social norms may originate from earlier phases of taxpayers' socialization and could thus be deemed to be *exogenous* from an economic point of view. Recent research indeed reveals that tax morale depends positively on religiosity, providing evidence for the socialization view of tax morale (Torgler 2006). Tax morale may however also be *endogenous* to the economic factors affecting tax compliance, i.e. deterrence and tax rates (Torgler 2005), or even to the behavior of fiscal authorities in general, e.g. the provision of public goods and services, participation possibilities for citizens in political decisions or the treatment of taxpayers by tax authorities (Feld and Frey 2002, 2002a, 2007, Feld and Tyran 2002, Frey 1997a, Frey and Feld 2002, or, from a theoretical perspective, Schnellenbach 2006, 2007).

In this paper, the development of tax morale in Germany is explained by relying on a comparison between inhabitants of East and West Germany after its post-unification period, using three World Values Survey/European Values Survey waves between 1990 and 1999. German unification constitutes a quasi natural experiment and is thus particularly interesting for the analysis of tax morale. Many factors can be controlled because they are similar in both parts of Germany, e.g., a common language, similar education systems and a shared cultural and political history prior to the separation after the Second World War. As a consequence, an East-West comparison has a methodological advantage compared to cross-country studies. In particular, we are interested in exploring whether social learning models help to predict the development of tax morale over time. The unification process provides a unique opportunity to explore this research question. Interestingly, the tax compliance literature has not explored this aspect although the economic literature has proposed that social learning, herding behavior or information cascades can help to explore a variety of social phenomena, such as social customs, criminal activities, manias, fashion, political and business behavior (see Bikhchandani, Hirshleifer, and Welch 1992, 1998, Gale 1996).

Our findings indicate that social learning models help to predict tax morale convergence after unification in Germany. The models lead to the hypotheses that tax morale between East and West German taxpayers will converge over time and that the convergence process is driven by a tax morale change among East German taxpayers. The results indeed indicate that within only 9 years after unification, tax morale values strongly converged, especially due to a strong reduction in the level of tax morale in the East. The remainder of the paper is organized as follows: The next section introduces our theoretical model and provides an overview on deterrence and tax morale in Germany. The differences in tax morale across Germany are afterwards explained in an empirical analysis by, first, conducting simple non-parametric tests, second, a multivariate analysis of the development of tax morale over time and, third, of cross sections of tax morale in the single years. The final section provides an overview of the results and outlines the conclusions.

II. SOCIAL LEARNING AND DETERRENCE

2.1. Social Learning: A Simple Model

Bikhchandani, Hirshleifer, and Welch (1992) stress: “One of the most striking regularities of human society is localized conformity. Americans act American, Germans act German, and Indians act Indian.” (p. 993). Thus the question arises as to which mechanisms lead to conformity. Bikhchandani et al. suggest four factors, namely sanctions on deviants, positive payoff externalities, conformity preferences and communication.

The economic literature on tax compliance has mainly focused on the first and third factors. In the standard model of tax evasion proposed by Allingham and Sandmo (1972), the taxpayer is regarded as an isolated expected utility maximizer. However, it is reasonable to believe that individual tax evasion decisions are affected by social norms. Erard and Feinstein (1994) and Torgler (2007) pointed out the role of honesty in tax compliance. Gordon (1989) and Myles and Naylor (1996) also emphasize that a psychic payoff is given to the taxpayer sticking to social custom of non-evasion. Recently, Feld and Tyran (2002), Traxler (2006), and Frey and Torgler (2007) argue that a taxpayer’s evasion decision depends on the compliance of other agents.

Assuming that an individual’s goal is to maximize income, taking as given the actions of others, a risk-neutral agent decides to evade taxes based on his/her utility. Without endogenous audit selection rules, the following utility function can be proposed:

$$U = \ln(x_i - \theta x_i) - \eta_i(\theta)x_i, \quad (1)$$

where $x_i = \tau e_i$ are the gains from tax evasion with τ as the tax rate and e_i as the income she/he decides to conceal. θx_i is the expected loss from tax evasion, where $\theta = p(1+s)$. The variable p denotes the probability that tax evasion is detected and s represents the penalty rate. Finally $\eta_i(\theta)x_i$ captures the “moral cost” of tax evasion, while η_i is a function of θ .¹

The first order conditions for an optimal tax evasion decision are

$$\begin{aligned} \frac{\partial U}{\partial x_i} = \frac{1}{x_i} - \eta_i(\theta) &= 0 \quad \rightarrow \quad x_i = \frac{1}{\eta_i} \\ \frac{\partial U}{\partial \theta} = -\frac{1}{1-\theta} - x_i \frac{\partial \eta_i}{\partial \theta} &= 0 \quad \rightarrow \quad \eta_i = \eta(\theta) \end{aligned} \quad (2)$$

The conditions indicate that tax morale negatively affects tax evasion and depends on deterrence by the tax authority. How deterrence shapes tax morale will be discussed subsequently. Before, it is important to understand how social norms adapt to exogenous changes.

¹ The impact of deterrence on tax morale is discussed in detail in the next subsection.

This simple algebraic representation above helps understand rigid conformity with society's rule against tax evasion and therefore is robust with regard to small shocks (Bikhchandani, Hirshleifer and Welch 1992). However, the literature on tax compliance has neglected the impact of large shocks on the level of conformity. We observe a similar lack of theories and studies explaining the convergence process of conformism and compliance. In this paper we therefore propose exploring the convergence process of the German unification as a large shock. As indicated in the introduction, this event constitutes a quasi-natural experiment, and we suggest that the social learning literature may help to understand the development of tax morale after unification. There are only a few theoretical models on social learning, including those from Banerjee (1992) and Bikhchandani, Hirshleifer and Welch (1992) who originally interpreted the decision problem of a sequence of exogenously ordered individuals under uncertainty about the state of nature. A key aspect is to decide how much effort to devote in collecting private information versus relying on public information (Burguet and Vives 2000). The literature has presented dynamic models of rational learning through market interactions by asymmetrically informed agents (Vives 1993) and has explored different facets of the learning process. Vives (1996) isolates two robust properties of learning from others. One is a self-correcting property which tends to promote full revelation in its self-enhancing facet or a slow down process in its self-defeating facet. The second property suggests that learning is involved with an information externality and the generation of inefficient outcomes. Modeling the dynamic interaction of boundedly rational agents, Gale and Rosenthal (1999, 2001) found that the stochastic process describing their interactions converges globally to a compact neighborhood of the equilibrium with probability one. Kahan (1997) suggests that the decision to commit crimes is highly interdependent, based on the perceived behavior of others: "When they perceive that many of their peers are committing crimes, individuals infer that the odds of escaping punishment are high and the stigma of criminality is low. To the extent that many persons simultaneously draw these inferences and act on them, moreover, their perceptions become a self-fulfilling reality." (p. 394). As a consequence, individuals' beliefs about crime is altered, suggesting that social influence affects criminality and the propensity to commit crimes. Similarly, we can assume that the behavior of other taxpayers is of great importance in understanding taxpayers' compliance. Individuals pay their taxes conditionally, depending on the pro-social behavior of other taxpayers. They are more willing to pay their taxes if they perceive others to be honest. The extent to which others also contribute triggers more or less cooperation and systematically influences the willingness to contribute. Relying on surveys from 30 European countries, Frey and Torgler (2007) show that if taxpayers believe tax evasion to be common, their tax morale decreases. In contrast, if they believe others to be honest, their tax morale increases. This result is consistent with the literature on conditional cooperation (see, e.g., Rabin 1998, Falk and Fehr 2002, Feld and Tyran 2002, Meier 2006).

Kahan (1997) suggests that the law is able to shape these perceptions by the way in which it creates information about the compliance/deviance of citizens. Furthermore, deterrence can be partly attributed to the phenomena of social influence. Similarly powerful is the possibility of a contagion effect in crimes such as assassinations, hijackings, kidnappings, and serial murders as referred to by Bikhchandani, Hirshleifer and Welch (1998). The relevance of social interaction and crime is explored by Glaeser, Sacerdote and Scheinkman (1996)

who focus on the United States in their analysis both across cities and across precincts in New York. The results indicate that social interaction models provide a framework for understanding variances of cross-city crime rates. Individuals are more likely to commit crimes when those around them do. Fortin, Lacroix and Villeval (2005) raise the possibility that individual tax decisions are affected by social learning effects, but did not consider the idea further. Thus, to the best of our knowledge, the effect of social learning on tax evasion or tax morale has not yet been studied, and we aim to address this shortcoming through the current analysis. In doing so, we will apply a similar model as that developed by Chamley (2004).

We denote a (representative) person from West Germany and East Germany as agent W and agent E respectively. The individual level of tax morale is η_i . We assume that the level of tax morale cannot be observed directly by agents. We use the parameter θ to indicate the deterrence status in the whole of Germany. We assume that it will take time to learn about a deterrence system (value of θ) due to the lack of information. Of course, individuals in West Germany have an advantage in this learning process because they have been active within the tax system several decades before unification. On the other hand, subjects in East Germany are not familiar with deterrence strategies after unification. To find θ , observed actions of those ahead are used and therefore behavior of West German taxpayers is used, which reduces the relevance of East Germans' own information. We anticipate that the rational expectations with regard to the level of deterrence are difficult to assume because of a lack of information. On the other hand, we can assume that rational expectations are observable with respect to the adoption of other formal and informal rules. For example, the West German's income and wealth levels were relatively well known to East Germans in 1990. Thus, under rational expectations, East Germans could build their expectations based on how West Germany operated in the decades prior to unification. Thus, income would not play a significant role in the discussion of a convergence process.

It is reasonable to assume that agent W makes his/her decision about tax evasion first. Then an agent E will make his/her evasion decision after he/she has observed agent W 's action. However, the agent can only receive *signals* (private information) about W 's tax morale level instead of observing it directly. For convenience, we denote $x_i = 1/\eta_i = \varphi_i(\theta)$. Then the signals agent E receives are equal to $s_i = \varphi_i + \varepsilon$. The distribution of φ is $N(\bar{\varphi}, 1/\rho_\varphi)$ and the noise terms ε_i are independent across all agents W and normally distributed with $N(0, 1/\rho_\varepsilon)$. Agent E 's belief of φ at the beginning of unification is given by the normal distribution $N(\mu_t, 1/\rho_t)$. Agent E will update his/her initial belief $N(\mu_t, 1/\rho_t)$ when he/she receives the signal $s_i = \varphi + \varepsilon$ from agent W . Using the Bayesian formula with a Gaussian distribution in Chamley (2004), we can find agent E 's updated belief $N(\tilde{\mu}_t, 1/\tilde{\rho}_t)$ with

$$\begin{aligned}\tilde{\mu}_t &= (1 - \alpha_t)\mu_t + \alpha_t s_t & (\alpha_t &= \frac{\rho_\varepsilon}{\rho_\varepsilon + \rho_t}) \\ \tilde{\rho}_t &= \rho_t + \rho_\varepsilon\end{aligned}\tag{3}$$

Then agent E will make his/her optimal evasion decision based on updated belief,

$$x_t = (1 - \alpha_t)\mu_t + \alpha_t s_t \quad (4) \quad \text{Thus at the}$$

beginning of the next observation, the belief of this agent E is,

$$\begin{aligned} \mu_{t+1} &= (1 - \alpha_t)\mu_t + \alpha_t s_t & (\alpha_t &= \frac{\rho_\varepsilon}{\rho_\varepsilon + \rho_t}) \\ \rho_{t+1} &= \rho_t + \rho_\varepsilon \end{aligned} \quad (5)$$

In the next observation, the belief is still normally distributed $N(\mu_{t+1}, 1/\rho_{t+1})$ and the process can be iterated as long as there is an agent living in Germany. The history of signals is the sequence of (s_1, \dots, s_{t-1}) .

Finally the precision of agent E's belief increases linearly with observation,

$$\rho_t = \rho_\varphi + (t-1)\rho_\varepsilon \quad (6)$$

When agent E has made sufficient observations ($t \rightarrow \infty$), his belief will be precise enough.

$$\begin{aligned} E_{t \rightarrow \infty}(\varphi) &= \varphi \\ \rho_t &\rightarrow \infty \end{aligned} \quad (7)$$

We can conclude that after unification, the East Germans' tax morale will gradually converge to the ones of West German taxpayers. This leads to the following two hypotheses:

Hypothesis 1: Tax morale values between East and West German taxpayers will converge over time.

Hypothesis 2: The convergence process is driven by a tax morale change among East German taxpayers.

Chamley (2004) suggests several extensions with similar implications in our case. For example, one can relax the assumption that agents convey information perfectly. Individuals' actions depend on private characteristics that cannot be observed perfectly. This suggests the implementation of a noisy signal. As a consequence, the convergence process slows down. It takes a larger number of observations to generate the same level of precision. The model can also be modified by allowing a continuum of agents and an aggregate noise.

2.2. Deterrence in East and West Germany

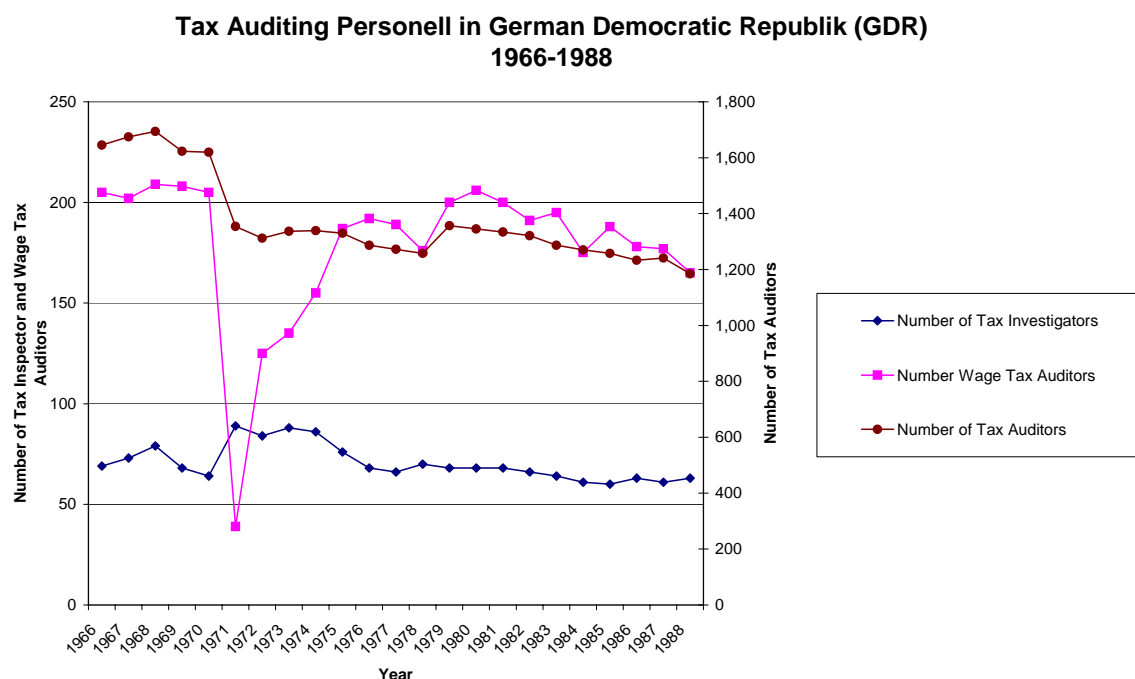
To get a better understanding as to whether tax morale may decrease or increase among East German taxpayers we will have to take a closer look at the deterrence system in West and East Germany before and after the unification.

2.2.1 Deterrence in East Germany (GDR) before Unification

A crucial difference between East and West Germany lies in the definition of the tax state. The tax system in the GDR state-directed planned economy played a minor role and served other purposes than in market-economies like West Germany (Schulz 1990, Kruse 1985). The main part of government revenues, in 1989 about

81%, came from “deductions for public households” in nationally owned enterprises and cooperatives. Only 4.4% of taxes were paid by individual taxpayers (wage tax, motor vehicle tax, municipal and inheritance taxes). An additional 1.6% is collected from private companies (Muessener 1990). Similar to the direct deductions in nationally owned enterprises (and to wage taxes in West Germany), wage taxes of workers and employees were withheld in the companies. In general, worker’s income tax liabilities were settled by deduction and no further declaration or assessment took place.

Figure 1

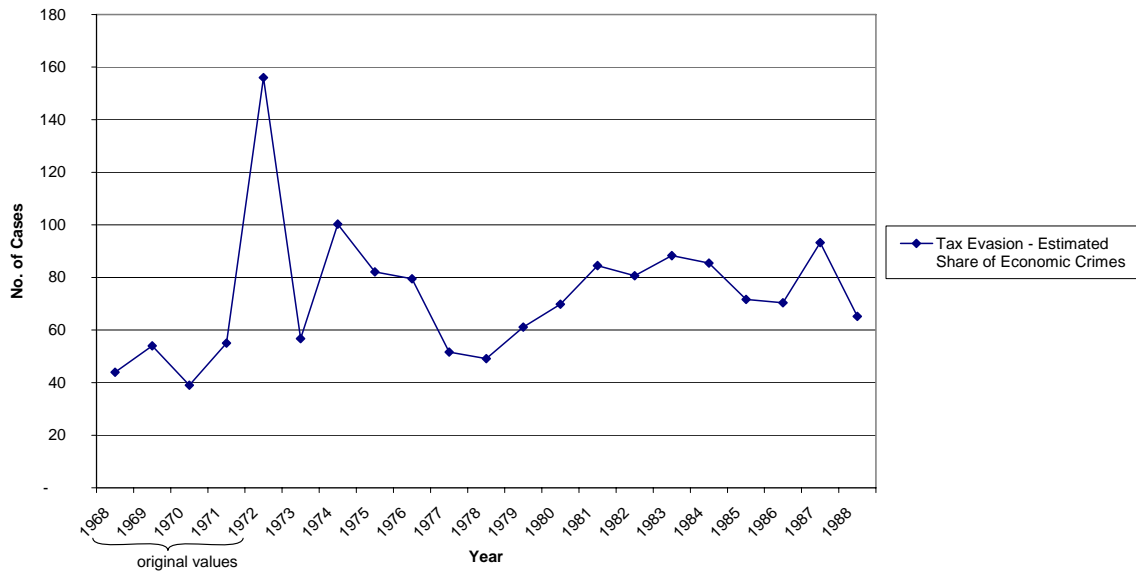


Source: Report about Tax Audits and Tax Investigation, Ministry of Finance of the GDR, German Federal Archives (DN1 22762, 1-3).

In the socialist GDR, institutions of tax administration were structured like the general administration. The fiscal divisions of the municipal councils functioned as local tax offices, the fiscal divisions of district councils (19 incl. Berlin) functioned as panels for taxpayers’ complaints. Tax investigation bureaus were also organized at district level and employed about 2-4 tax investigators, altogether about 70 investigators. The whole tax investigation procedure was planned and headed by a division in the Ministry of Finance of the GDR. It is important to note that no Finance courts existed, and aside from complaints at the local level and an appeal at the district level, taxpayers could not take legal action against a tax assessment

Figure 2

Sentences for Tax Evasion in GDR 1968-1988
(1973-1988 Estimated by an Average Share of Economic Crimes)



Source: Crime Statistic of the General Attorney of GDR, German Federal Archives (DP 3/740-743).

Similar to West Germany, the GDR's criminal tax code distinguished tax offences in tax crimes and tax misdemeanor. The possible consequence for tax crimes, literally translated, "Shortening of taxes, duties, deductions to public treasury and social security contributions" (§176 StGB of the GDR) ranged from a public demerit to a penalty of up to two years of imprisonment. In severe cases, imprisonment of two to eight years had to be inflicted. Negligent tax evasion could be punished like a simple tax misdemeanor. Possible punishment for tax misdemeanors in GDR ranged broadly from a rebuke without any further consequence to heavy fines of 10'000 Mark (§§ 21, 22 Ordnungswidrigkeitenverordnung (OWVO) of the GDR). In the GDR's authoritarian system, enhanced prosecution and investigation possibilities could be found in reality and in the code of law (*Figure 1*). The proceedings for tax crimes took place before court, and state attorneys were in charge of the investigation and prosecution procedure. They had extended investigation possibilities. Authorities of the Ministry of State Security (Ministerium für Staatssicherheit, abbr. MfS), the Ministry of Interior and the GDR's people's police could assist their investigations (§88 StPO of the GDR). Especially, the surveillance and denunciation system of the MfS could be used, according to statements from contemporary officials. Accordingly, overall cases of sentencing for tax evasion remained approximately stable and on a relatively low level (*Figure 2*). Unfortunately we could not reveal the level of sentencing in terms of penalty and years of imprisonment.

Overall, these considerations amount to a first stylized fact:

Fact 1: Deterrence, as the product of fines and the intensity of control, in East Germany before unification was higher than in West Germany, while opportunities for taxpayers to evade taxes were relatively lower.

A majority of theoretical studies predicts a negative impact of deterrence on tax evasion (Torgler 2002). Surveying the empirical literature, Alm (1999) stresses that a higher audit rate leads to more compliance, with an

estimated income audit rate elasticity between 0.1 and 0.2. Similarly, a higher fine rate leads to marginally more compliance with a reported income-fine elasticity of less than 0.1.²

Thus, given the theoretical arguments, Fact 1 induces to the following hypothesis:

Hypothesis 3: An increase of opportunities to evade taxes and a decrease in deterrence leads to a decrease of tax compliance among East Germans.

While there is a broad discussion in the literature on the impact of deterrence on *tax compliance*, the impact of auditing and fines on *tax morale* is much less intensively elaborated (see the surveys by Andreoni, Erard and Feinstein 1998, Slemrod and Yitzhaki 2002, Slemrod 2003, Torgler 2007). The impact of deterrence on tax morale is, however, also theoretically open. Allingham and Sandmo (1972) assume that tax morale is exogenous and thus implicitly perceive it as the result of individual socialization or cultural and historical predispositions. Deterrence does not have any impact on tax morale in their model. It is unlikely though that tax morale does not endogenously depend on deterrence, as the ethical concern what should and what should not be done does not drop from heaven. Social norms must emerge in order to influence behavior and their emergence is shaped by the legal and political environment. Posner (1998, 2000a, b) argues that deterrence signals social norms to citizens in the sense that they are educated by deterrence measures what they should do. Smith and Mackie (2000: 377) note: “Norms must be brought to mind before they can guide behavior. They can be activated by deliberate reminders or by subtle cues, such as observations of other people’s behavior.” Similarly, recent experimental evidence by Fehr and Rockenbach (2004) shows that individuals adopt strategies to punish free riding behavior even if punishment is costly leading to an evolutionary dominant strategy. According to these arguments, deterrence can be hypothesized to raise tax morale (*deterrence view*).

Deterrence could also influence tax morale negatively. As Frey (1997b) has argued, deterrence may crowd out intrinsic motivation. Generalizing concepts from social psychology according to which monetary (external) rewards undermine intrinsic motivation under certain conditions,³ he contends that all types of external interventions may negatively affect intrinsic motivation. Not only offering rewards but also issuing commands, imposing rules and regulations as well as punishments may undermine individuals’ tax morale being interpreted as their intrinsic willingness to comply with tax laws. External interventions undermine intrinsic motivation when

² Some studies show ambiguous evidence (see Spicer and Lundstedt 1976, Friedland 1982, Elffers, Weigel and Hessing 1987, Pommerehne and Weck-Hannemann 1996, Varma and Doob 1998 and Wenzel 2004). Scholz and Lubell (2001) even found a crowding out of tax compliance when fines are introduced. Feld and Frey (2002) also provided support for the ambiguous impact of deterrence on tax compliance. For a panel of Swiss cantons, they report evidence that a higher intensity of control increases tax evasion while fines and penalties reduce tax evasion. Similar evidence is reported by Torgler (2005) on the impact of deterrence on tax morale in the Swiss cantons. Dubin, Graetz and Wilde (1987), Dubin and Wilde (1988), Beron, Tauchen and Witte (1992) and Slemrod, Blumenthal and Christian (2001) found a significant positive impact of the probability of detection on tax evasion at least for some income groups thus contradicting traditional theory.

³ See Deci (1975), Deci and Ryan (1985) or the survey by Lane (1991, ch. 19).

they are perceived to be intrusive by the individuals concerned, and they maintain or raise intrinsic motivation when they are perceived to be supportive. Increasing monitoring and penalties for noncompliance, individuals notice that extrinsic motivation has increased, which on the other hand crowds out intrinsic motivation to comply with taxes. If the intrinsic motivation is not recognized, taxpayers get the feeling that they can as well be opportunistic. On the other hand, tax morale is not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations which prevent free riding by others, reducing the possibility to escape from their tax payments may help to preserve tax morale. In general, tax audits as intrusion by tax authorities can be hypothesized to undermine tax morale more strongly if the taxpayers' sense of self-determination is high (*crowding-out view*). Overall, it is thus theoretically open whether deterrence has a positive or negative impact on tax morale.

What about an increase in opportunities? A summary of the literature on tax morale indicate an increase in opportunities in transition countries led a decrease in tax morale (Torgler 2007). The rapid collapse of institutional structures produced a vacuum in many countries, followed by large social costs, especially in terms of worsening income inequality and poverty rates and bad institutional conditions, based on uncertainty and high transaction costs.

In sum and considering our third hypothesis, it must therefore be left open whether deterrence has a positive or a negative impact on individuals' tax morale.

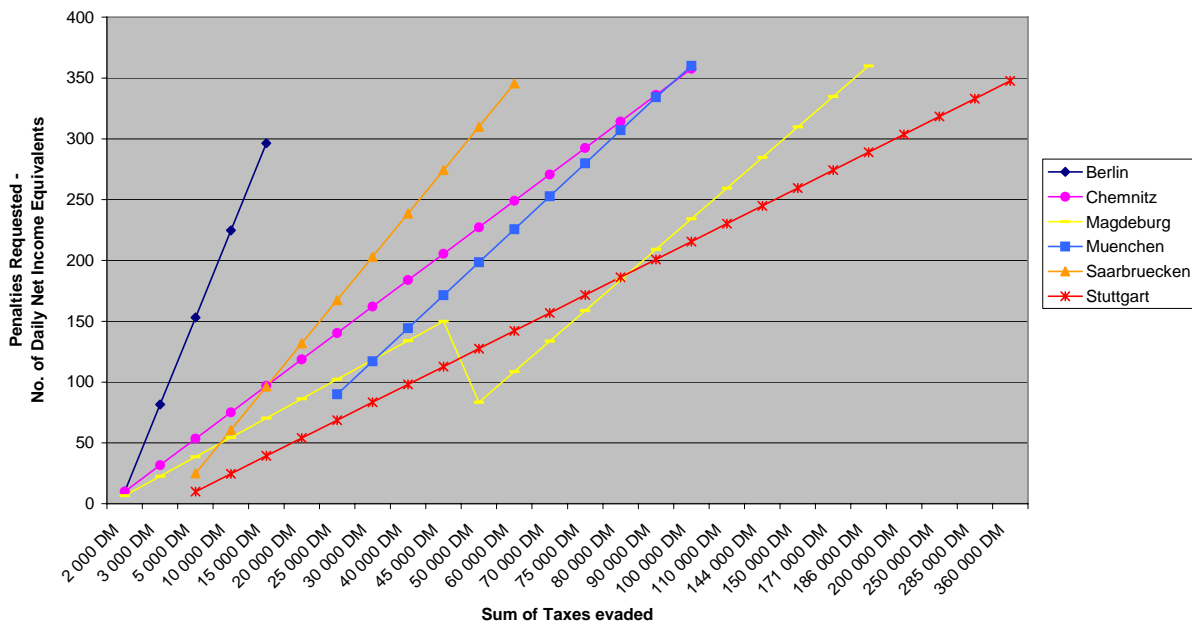
2.2.2. Deterrence in West and Unified Germany⁴

The legal foundation of the prosecution of tax evasion in Germany is the general fiscal code (AO). Below this level of statutory law, administrative instructions and the case law based on the decisions of the Federal Finance Court (which functions as appellate court) are of importance. According to §370 AO, possible punishments for tax evasion range from a fine to a prison sentence up to 5 years. In serious cases of tax evasion, in combination with the abuse of official authority or with fraud, the possible sentences increase and range from a minimum of 6 months up to a maximum of 10 years of imprisonment. The fines depend on the amount of taxes evaded, cooperation in the proceedings, and the individual daily net income of the tax evader. Fines range from the equivalent of six to 360 times the tax evader's daily net income. Regional Tax Offices (OFD) developed sentence tables for standard cases of tax evasion. Six examples for mild, average and severe sentencing are shown in *Figure 3*. The large regional differences result from the high degree of administrative autonomy of the regional tax offices.

Figure 3

⁴. In a recent paper, Feld, Schmidt and Schneider (2006) provide an overview of deterrence for tax evasion in Germany. This section summarizes their main descriptive parts.

Penalties Requested for Tax Evasion Administrative Instruction Tables of Different Regional Tax Offices

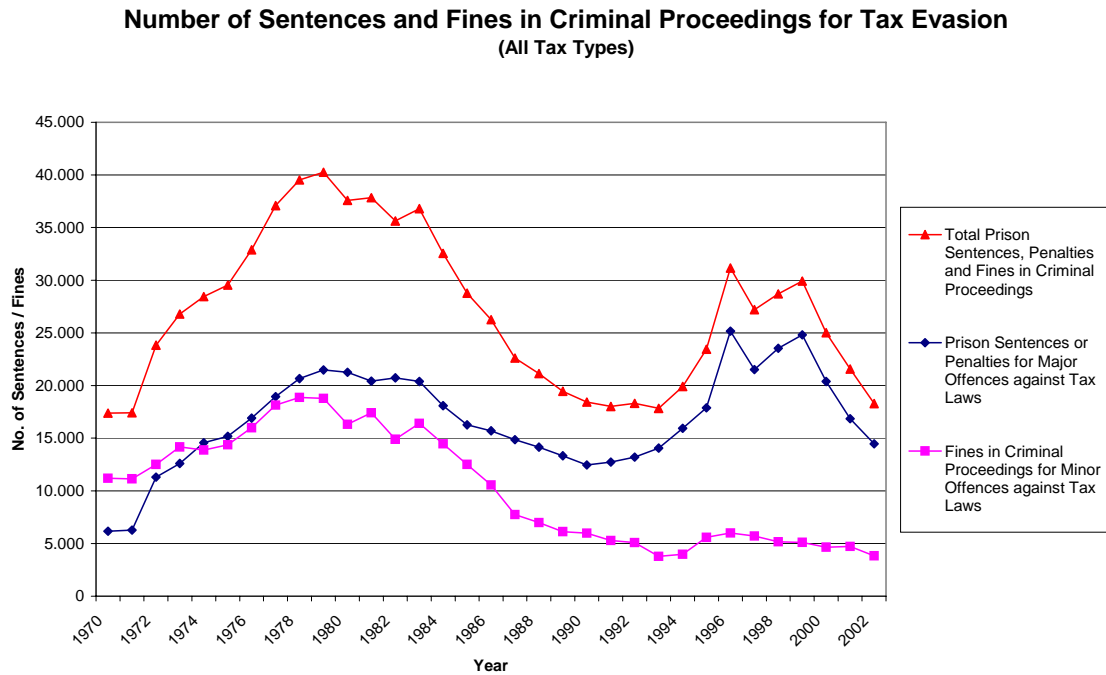


Source: Feld, Schmidt

and Schneider (2006).

The main offence within the category of tax misdemeanors could be literally translated as “tax shortening” (§378 AO *Leichtfertige Steuerverkürzung*). In comparison to tax evasion, tax “shortening” does not result from a deliberate act, but from gross negligence. Gross negligence is presumed if, for example, the taxpayer does not hand in a tax return, does not inform himself about his tax duties, or does not scrutinize the tax statement prepared by his tax advisor. Tax “shortening” can also be an offence by tax advisors or accountants if they do not pay the necessary professional attention. In contrast to the Anglo-American system, the situation in Germany is that tax misdemeanors can only be punished by fines. For “tax shortening” a fine of up to €50,000 can be imposed. The statutory limitation period for prosecution of tax misdemeanors is 5 years (§384 AO).

Figure 4

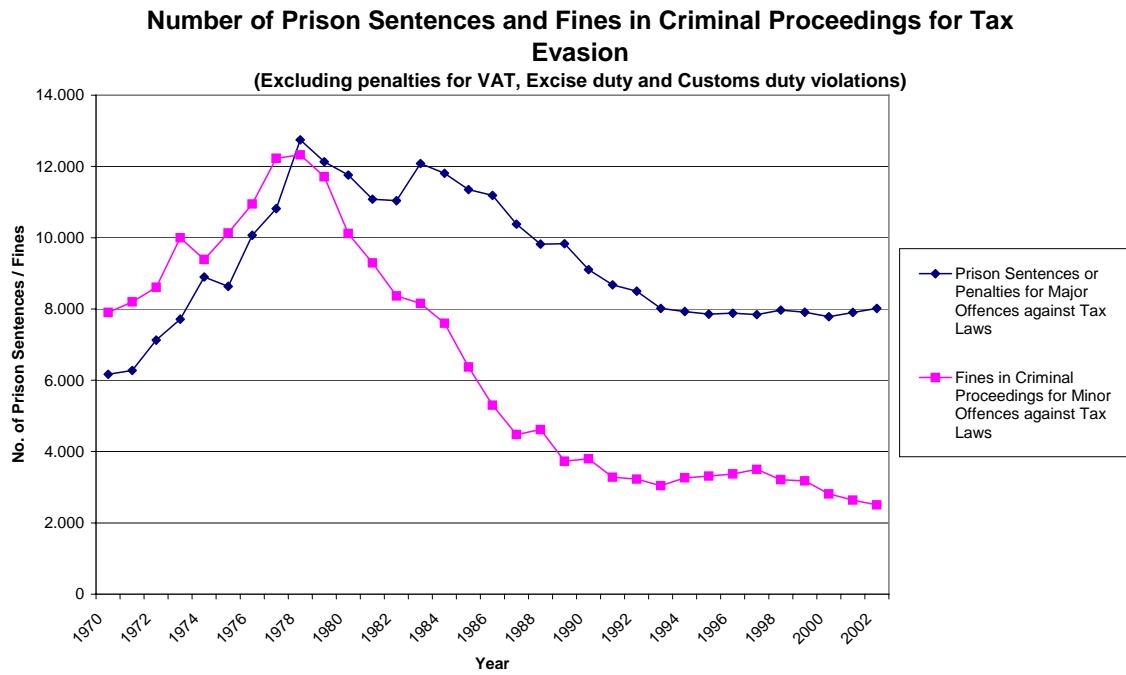


Source: Feld, Schmidt and Schneider (2006).

The German general criminal tax code remained relatively unchanged after 1969. Apart from editorial revisions, only three changes seem to be relevant. First, in 1993, taxes and customs duties of the European Union fiscal code became taxes in the sense of the German criminal tax code. Second, in 2001, the maximum fine for evasion of withholding taxes was increased from €5,000 to €25,000. Third, in 2002 the possibility of handing in amended returns was extended to tax evasion committed by accountants or in relation to organized crime (§370a StGB). This change is intended to support whistle-blowing in criminal organizations. A person handing in an amended return can only be sentenced to half of the usual sentence. For the period 1982-2002, the developments in case law due to decisions of the Finance Courts, especially the Federal Finance Court, are listed by Bilsdorfer (2003).

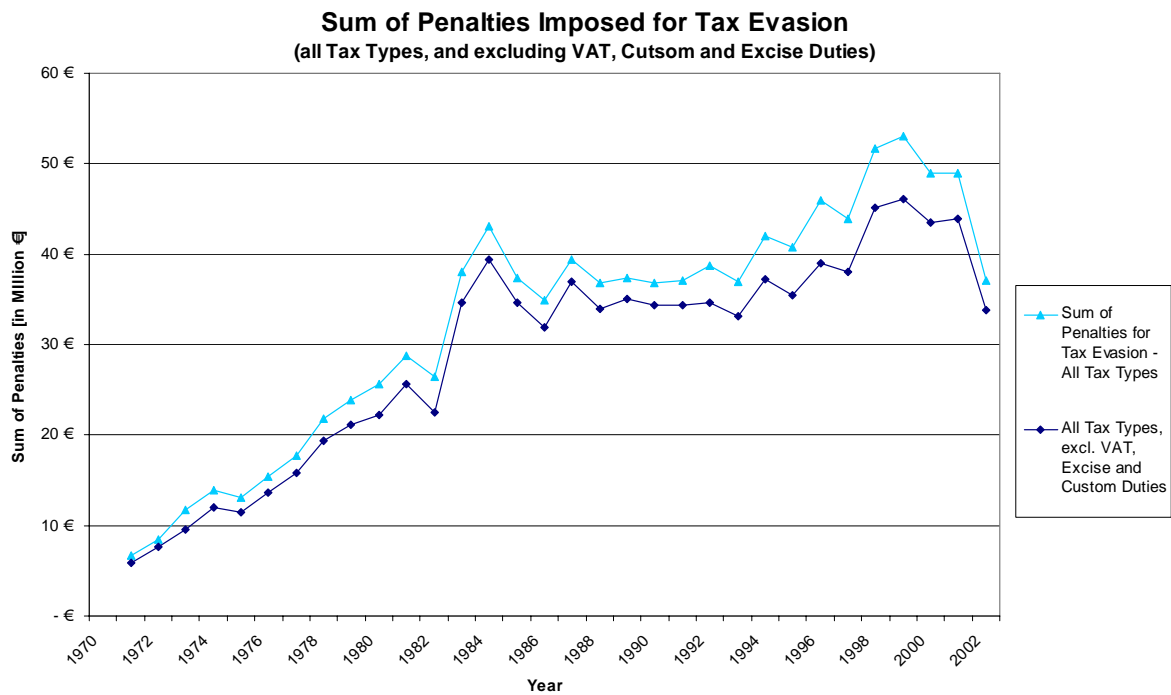
Considering the developments of the overall number of sentences and fines imposed for tax evasion in criminal proceedings in long time-series (*Figure 4*), i.e. the number of cases that were actually prosecuted, the figures show peaks in severe punishment at the beginning of the 1980s as well as in the mid and late 1990s. The changes in the 1990s mainly result from offences in VAT, customs duties and excise duties (*Figure 5*), and thus reflect the change in the law in 1993. With regard to the punishment of minor and major offences, it seems evident that the number of cases with fines for minor tax offences decreased a lot more than the number of those with prison sentences or penalties for major tax offences.

Figure 5



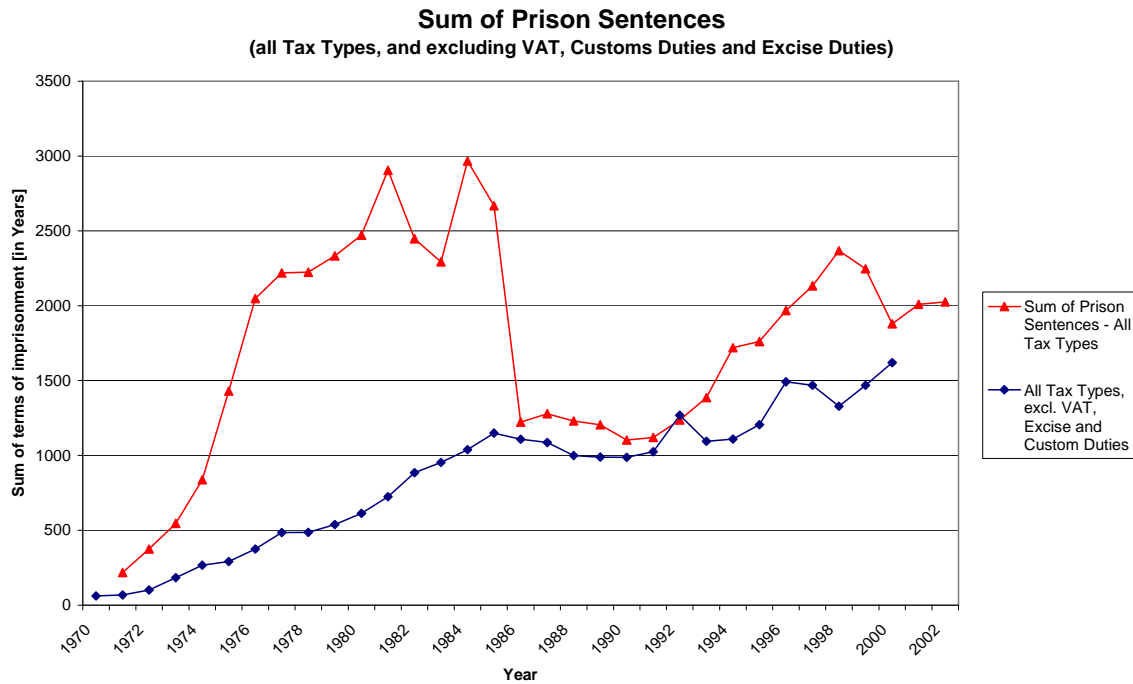
Source: Feld, Schmidt and Schneider (2006).

Figure 6



Source: Feld, Schmidt and Schneider (2006).

Figure 7



Source: Feld, Schmidt and Schneider (2006).

Figures 6 and 7 indicate that these offences have been more severely punished since the middle of the 1980s. Since the beginning of the 1970s, a steadily increasing trend can be observed for the sum of nominal penalties imposed for tax evasion (*Figure 6*). For the sum of prison sentences (*Figure 7*), i.e. in more serious cases of tax evasion, there is a decline which is first observable in the beginning of the 1980s and which became steeper during the end of the 1980s. When offences in cases of indirect taxation are excluded, the figures show a steady increase. This could of course reflect the fact that the extent of tax evasion has increased over time as well. But taking these figures together with those shown in *Figures 4 and 5*, it becomes clear that the lower number of offences punished with prison and fines was more than weighed up by more severe sentences (higher fines and longer imprisonment). This leads us to state a second stylized fact:

Fact 2: Deterrence has increased in (West) Germany from the mid 1980s until 2001.

Together with the theoretical considerations from above, Fact 2 also induces a hypothesis with respect to tax compliance rather than tax morale.

Hypothesis 4: An increase of deterrence in Germany in the 1990s leads to a decrease of tax evasion.

Following the arguments from above, we cannot assume that an increase in deterrence has a positive impact on tax morale. However, we will be able to see whether tax morale has changed over the observed period.

III. TAX MORALE IN UNIFIED GERMANY

3.1. Tax Morale and Culture Differences

Many researchers have suggested that tax morale differs across countries; that is, if taxpayer values are influenced by cultural norms, with different societal institutions acting as constraints and varying between different countries, then tax morale may be an important determinant of taxpayer compliance and other forms of behavior. However, isolating the reasons for these differences in tax morale is notoriously difficult (Alm and Torgler 2006). Alm, Sanchez, and De Juan (1995) compare identical tax compliance experiments conducted in Spain and the United States, two countries with very different cultures and histories of compliance but with broadly similar systems of taxes, especially income taxes. They find that subjects in the United States consistently exhibit higher compliance than subjects in identical experiments in Spain, and attribute these differences to higher tax morale in the United States, but without investigating tax morale differences between Spain and United States. Thus, Alm and Torgler (2006) reduce such a shortcoming by analyzing cross-sections of individuals in Spain and the United States using the WVS data. If tax compliance differences are attributed to a higher social norm of compliance in the United States, as found experimentally by Alm, Sanchez, and De Juan (1995), then WVS data on tax morale should show similar tendencies. Thus, the paper analyzes a cross-section of individuals in both countries using the WVS data for the three different waves (or years) of the survey, 1990, 1995, and 1999-2000. Alm and Torgler (2006) find consistent evidence that individuals in the United States have statistically significant and higher tax morale than those in Spain, controlling for additional factors in a multivariate analysis. Together with the experimental results, the results clearly support the notion there is a higher social norm of compliance in the United States than in Spain. Cummings, Martinez-Vazquez, McKee, and Torgler (2008) combine experimental and survey data from the United States, Botswana, and South Africa to investigate whether cross-cultural differences can explain tax compliance behavior across these countries. Their results indicate that the observed differences in tax compliance behavior and tax morale can be explained by differences in the fairness of tax administration, in the perceived equity of the fiscal exchange, and in the overall attitude towards the respective governments across the countries. In contrast to these studies, Torgler and Schneider (2007) concentrate on the impact of cultural and institutional variation on tax morale within countries (Spain, Belgium, Switzerland), providing new insights into the factors that shape the emergence and maintenance of citizens' willingness to cooperate with tax legislation.

3.2. Tax Morale in Germany

Two papers on tax morale have also used German data. Torgler and Werner (2005) investigate German's fiscal federalism which has undergone a process of perpetual reform. Using recent data, the authors observe the tendency that higher fiscal autonomy leads to higher tax morale. Torgler (2003) started to explore tax morale differences between inhabitants of East and West Germany focusing on the first part of the 1990s. The findings indicate that inhabitants of East Germany have higher tax morale than those of West Germany, both in 1990 and 1997. Thus, the paper starts to observe an unfinished convergence process in the level of tax morale between the two populations.

To assess the level of tax morale in East and West Germany we use, in line with the previous literature, the following question from the WVS throughout the whole paper:

“Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: ...Cheating on tax if you have the chance.”

The question leads to a ten-scale index of tax morale with the two extreme points “never justified” and “always justified”. The scale has been recoded into a four-point scale (0, 1, 2, 3), with the value 3 standing for “never justifiable”. 4-10 have been integrated in the value 0 due to a lack of variance.

Figure 8
Tax Morale over Time in Germany (Means)



The development of tax morale in unified Germany is presented in *Figures 8 to 11* for the three waves of the WVS between 1990 and 1999. *Figure 8* displays the mean values for West and East Germany in each year, while *Figures 9, 10* and *11* refer to the distribution of tax morale scores in East and West Germany for the years 1990, 1997 and 1999, respectively. These figures reveal higher tax morale for East Germans than for West Germans in all years. However, East Germans’ highest tax morale score declined from 1990 to 1997. On the other hand, tax morale development in West Germany seems to be quite stable between 1990 and 1997. Between 1997 and 1999, we observe a general increase of tax morale, which is strong in West Germany, but less so in the Eastern part. In the 9 years after unification, tax morale in East and West Germany converged, until being almost identical 1999. Hence, the third stylized fact:

Fact 3: Tax morale in East Germany, which was initially higher, converged to the lower West German levels between 1990 and 1999.

Figure 9
Tax Morale in East and West Germany in 1990

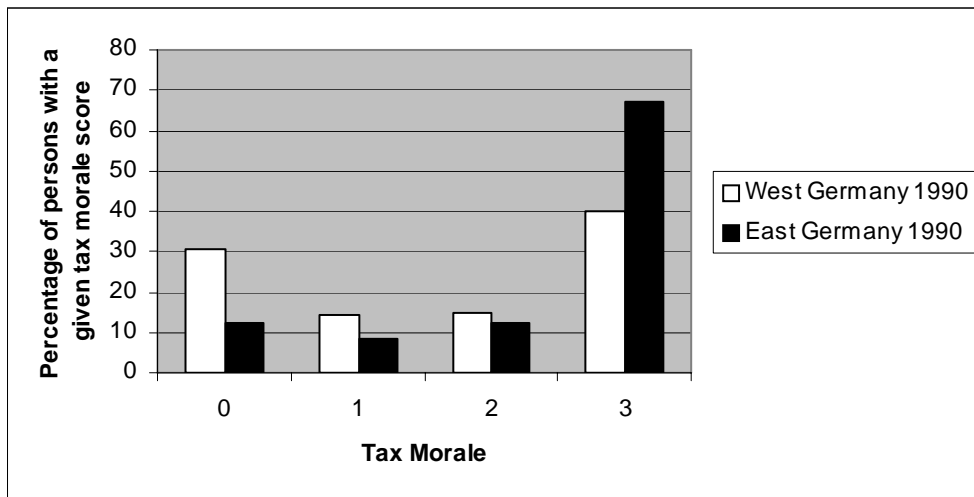


Figure 10
Tax Morale in East and West Germany in 1997

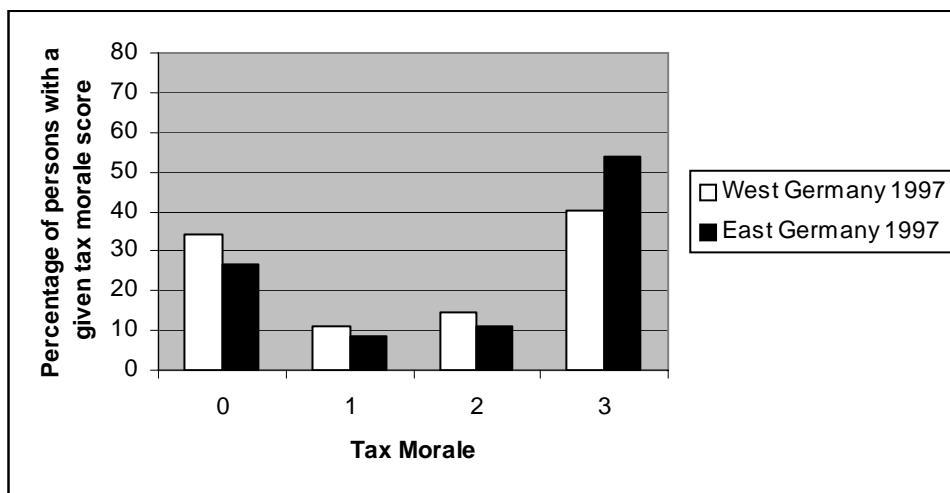
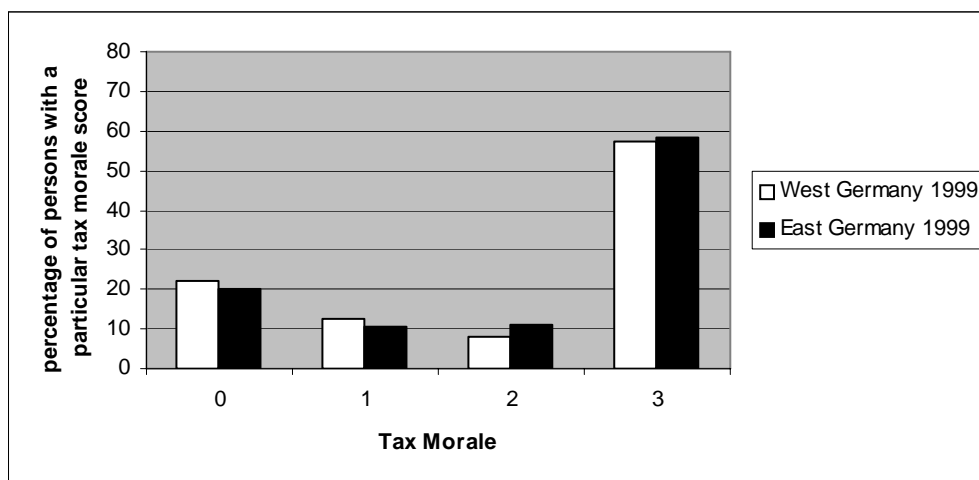


Figure 11
Tax Morale in East and West Germany in 1999



IV. EMPIRICAL ANALYSIS

Given the stylized facts, it is important to find out whether the differences in tax morale between the two parts of Germany and its development after unification are, first, statistically significant, and, second, could be attributed to changes in deterrence levels. If the deterrence view holds, we should observe a significant drop of tax morale in the East as compared to the West as deterrence in East Germany declined considerably due to unification. The efforts of the German federal government to increase deterrence after unification could be expected to raise tax morale overall from 1990 to 1999 among West German taxpayers. Moreover, it may also affect East German taxpayers as soon as they have adapted to the new environment. If the crowding-out view of tax morale holds, an increase of deterrence after unification would not increase but rather reduce tax morale. We explore these questions in turn.

4.1. Wilcoxon Rank-Sum Test (Mann-Whitney)

Table 1
Two-Sample Wilcoxon Rank-Sum (Mann-Whitney) Test

Hypothesis	z-value	Prob > z
East-West Comparison		
H ₀ : TM West Germany 90 = TM East Germany 90	-16.159	0.000
H ₀ : TM West Germany 97 = TM East Germany 97	-5.602	0.000
H ₀ : TM West Germany 99 = TM East Germany 99	-0.892	0.372
Over Time		
East Germany		
H ₀ : TM East Germany 90 = TM East Germany 97	7.914	0.000
H ₀ : TM East Germany 90 = TM East Germany 99	5.199	0.000
H ₀ : TM East Germany 97 = TM East Germany 99	-2.576	0.010
West Germany		
H ₀ : TM West Germany 90 = TM West Germany 97	0.812	0.417
H ₀ : TM West Germany 90 = TM West Germany 99	-7.864	0.000
H ₀ : TM West Germany 97 = TM West Germany 99	-7.399	0.000

As a first step, we test whether our different samples have the same distribution using the Wilcoxon rank-sum test (Mann-Whitney). The results are presented in *Table 1*. The upper part of *Table 1* presents the test results for a comparison between East and West Germany for the whole sample, while the lower part shows the results for comparison for each year within each German region. In an east-west comparison there are significant differences in tax morale for the years 1990 and 1997, while these differences are not statistically significant for the year 1999. It seems as if tax morale within Germany had converged lending support to the first hypothesis. Moreover, it seems that the convergence process has been driven by a change in tax morale among East German individuals. In East Germany, tax morale was significantly lower in the years 1997 and 1999 than in 1990. Interestingly, tax morale increased significantly between 1997 and 1999. Such a significant increase between 1997 (1990) and 1999 could also be observed for West Germany. Such a result would be consistent with a deterrence hypothesis that positively affects tax morale and tax compliance. While deterrence slowly increased

between 1990 and 1997, the slopes of the deterrence curves became steeper in the following years and declined afterwards.

4.2. Multivariate Analysis: Development over Time

In order to test whether these regional differences are robust to the inclusion of other determinants of tax morale, we conduct a multivariate analysis in two steps: First, the development of tax morale across time is explained for East and West Germany separately and together. Second, tax morale is explained in a cross section analysis for unified Germany in the single years 1999, 1997 and 1990. The model we propose to test is estimated using weighted ordered probit analysis and is standard in tax morale research (see Torgler 2005, 2006, 2007). The tax morale variable obtained from the WVS (EVS) is explained by a vector of demographic variables (age, sex and education), marital status, employment status, income, religiosity, trust and the time or regional dummy variables being one for particular years (zero otherwise) or particular regions (East or West Germany) in these years.

Before turning to the estimation results, a few remarks should be made concerning the different proxies used. First, we had to revert to a relatively crude proxy for income, as unfortunately, the income variable was scaled differently in East and West Germany in 1990 and 1997, as well as differently coded in 1990/1997 and 1999 (see Appendix). Income could thus be included in the estimations only for the year 1999. In order to get a proxy for the economic situation, a variable is used where people classified themselves into the groups (1) upper or upper middle class; (2) middle or lower middle class; (3) all others (see Appendix). Marital status has also been coded slightly differently in the year 1999. The “living together” class of the World Values Survey is missing in 1999 (EVS). Instead a “never married” class is included. Thus, living together/single (WVS 1990/97) and never married (EVS 1999) are now in the same class which is used as the reference group (see Appendix).

Furthermore, from the set of standard variables according to the Allingham/Sandmo tax evasion model only income is explicitly included as an explanatory variable. Unfortunately, no information is available as to the (true or perceived) marginal tax rates of the respondents in the sample.

Table 2

Tax Morale Development in East Germany (1990, 1997, 1999)

<i>WEIGHTED ORDERED PROBIT</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>
<i>INDEPENDENT V.</i>	<i>1a</i>			<i>2a</i>			<i>3a</i>		
a) Demographic Factors									
AGE 30-39	0.209***	2.74	0.077	0.221***	2.88	0.081	0.218***	2.83	0.080
AGE 40-49	0.437***	5.26	0.155	0.446***	5.34	0.158	0.450***	5.39	0.159
AGE 50-59	0.546***	6.23	0.189	0.565***	6.39	0.194	0.574***	6.45	0.197
AGE 60-69	0.639***	4.90	0.214	0.644***	4.90	0.214	0.616***	4.72	0.207
AGE 70+	0.774***	4.89	0.247	0.792***	5.00	0.250	0.753***	4.75	0.241
FEMALE	0.298***	5.93	0.112	0.299***	5.87	0.113	0.291***	5.68	0.110

EDUCATION				-0.011*	-1.88	-0.004	-0.010*	-1.73	-0.004
b) Economic Variable									
UPPER CLASS	-0.163**	-2.08	-0.062	-0.131	-1.58	-0.050	-0.147*	-1.77	-0.056
MIDDLE CLASS	-0.008	-0.14	-0.003	0.028	0.46	0.011	0.010	0.16	0.004
c) Marital Status									
MARRIED	0.017	0.25	0.006	0.0005	0.01	0.0002	-0.008	-0.11	-0.003
DIVORCED	0.022	0.20	0.008	0.009	0.08	0.003	0.012	0.10	0.005
SEPARATED	-0.130	-0.40	-0.050	-0.148	-0.46	-0.057	-0.149	-0.47	-0.057
WIDOWED	-0.063	-0.53	-0.024	-0.092	-0.76	-0.035	-0.106	-0.87	-0.040
d) Employment Status									
PART TIME EMPLOYED	-0.108	-0.99	-0.041	-0.111	-1.00	-0.042	-0.118	-1.07	-0.045
SELFEMPLOYED	-0.041	-0.28	-0.015	-0.043	-0.29	-0.016	-0.037	-0.25	-0.014
UNEMPLOYED	0.042	0.44	0.016	0.030	0.31	0.011	0.036	0.38	0.013
AT HOME	0.121	0.70	0.045	0.113	0.65	0.042	0.106	0.60	0.039
STUDENT	0.059	0.40	0.022	0.239	1.40	0.086	0.182	1.04	0.066
RETIRED	0.244	2.17	0.090	0.255**	2.25	0.093	0.274**	2.43	0.100
OTHER	0.347	1.78	0.121	0.375*	1.85	0.130	0.364*	1.79	0.126
e) Religiosity									
CHURCH ATTENDANCE	0.028**	2.04	0.010	0.029**	2.09	0.011	0.028**	2.05	0.011
f) Time									
EAST 97	-0.456***	-7.88	-0.174	-0.407***	-6.46	-0.155	-0.399***	-6.29	-0.152
EAST 99	-0.378***	-5.85	-0.147	-0.367***	-5.52	-0.142	-0.389***	-5.81	-0.151
g) Trust									
TRUST IN THE LEGAL SYSTEM/JUSTICE							0.125***	3.89	0.047
Number of observations	3132			3085			3046		
Prob > chi2	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, LOWEST CLASS, EASTERN 90. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect highest tax morale score (3).

Table 2 contains the estimation results for East German tax morale in 1990, 1997 and 1999. There are three different specifications: The baseline model is presented in the first three columns. The next three columns show the estimates including education, and the final three columns additionally include a variable capturing trust in the legal system or in justice.

Age and sex prove to have significant effects on East German tax morale. The older the persons are, the higher is their tax morale. The marginal effects increase with an increase of age. Women also have significantly higher tax morale. These results remain robust across the three specifications. The effect of income on tax morale is significantly negative only for those who define themselves as members of the upper class. Neither marital nor employment status have significant effects on East German tax morale, although the values for retired people are significantly higher (keeping age constant). As expected from the introductory remarks, religiosity has the expected positive effect on tax morale also for East German citizens. The observed differences in tax morale across time for East Germany are robust to the inclusion of covariates: The dummy variables for East Germany in 1997 and in 1999 are significantly negative. Tax morale in East Germany in these two years is significantly lower than in the year 1990. The estimated marginal effects indicate that the decline of East German tax morale from 1990 to 1997 is slightly more pronounced than that from 1990 to 1999.

Including education does not alter these results. Education turns out to have only a marginally significant negative effect. Trust has a significantly positive effect on East German tax morale. Including trust in the legal system/in justice leaves the socio-demographic effects unchanged and does not affect the significance of the time dummies. But it reduces their marginal effects. In particular, it leads to the result that the quantitative impact of both dummy variables as measured by the marginal effects is virtually the same.

The estimation results for West German tax morale are presented in *Table 3*. It should be noted that there are remarkable differences between the East and West German estimation results regarding socio-demographic and economic variables. The impact of age is less clear-cut in West than in East Germany. Education has a significantly robust negative effect on tax morale. Income does not have any significant effect on West German tax morale, while marital status turns out to be significant. Compared to singles, married, divorced and widowed individuals report significantly higher tax morale. Regarding the employment status, tax morale of the unemployed is significantly lower. Like in East Germany, religiosity has a significantly positive impact also on West German tax morale. The time pattern of tax morale is however rather different in West Germany. While tax morale in 1997 does – ceteris paribus – not differ significantly from that in 1990, tax morale in 1999 is significantly higher. This corresponds to the deterrence efforts of the federal government that have intensified during the late the 1990s. When controlling for trust in the legal system the difference in tax morale between 1990 and 1997, as captured by the respective dummy variables, is significantly positive, and the variable has a highly significant positive effect. This result also corresponds to the slow, but steady increase of deterrence between 1990 and 1997.

Table 3

Tax Morale Development in West Germany (1990, 1997, 1999)

<i>WEIGHTED ORDERED PROBIT</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>
<i>INDEPENDENT V.</i>	<i>1b</i>			<i>2b</i>			<i>3b</i>		
a) Demographic Factors									
AGE 30-39	0.009	0.13	0.003	0.018	0.27	0.007	0.015	0.22	0.006
AGE 40-49	0.050	0.69	0.020	0.050	0.68	0.020	0.062	0.83	0.024
AGE 50-59	0.153*	1.94	0.061	0.135*	1.69	0.054	0.131	1.63	0.052
AGE 60-69	0.315***	3.05	0.125	0.308***	2.95	0.122	0.293***	2.77	0.116
AGE 70+	0.293**	2.50	0.117	0.282**	2.38	0.112	0.247**	2.07	0.098
FEMALE	0.135***	2.93	0.053	0.122**	2.56	0.048	0.128***	2.67	0.050
EDUCATION				-0.018***	-3.11	-0.007	-0.019***	-3.24	-0.008
b) Economic Variable									
UPPER CLASS	-0.020	-0.29	-0.008	0.054	0.76	0.021	0.032	0.44	0.013
MIDDLE CLASS	-0.075	-1.23	-0.030	-0.049	-0.79	-0.019	-0.054	-0.86	-0.022
c) Marital Status									
MARRIED	0.223***	3.86	0.088	0.203***	3.39	0.080	0.183***	3.05	0.072
DIVORCED	0.217**	2.23	0.086	0.204**	2.08	0.081	0.201**	2.02	0.080
SEPARATED	0.163	0.84	0.065	0.174	0.88	0.069	0.180	0.90	0.072
WIDOWED	0.251***	2.69	0.100	0.233**	2.46	0.093	0.220**	2.30	0.088

d) Employment Status

PART TIME EMPLOYED	-0.013	-0.17	-0.005	-0.011	-0.15	-0.004	-0.014	-0.18	-0.006
SELFEMPLOYED	0.011	0.09	0.004	0.007	0.06	0.003	0.022	0.18	0.009
UNEMPLOYED	-0.287**	-2.57	-0.110	-0.281**	-2.48	-0.108	-0.259**	-2.26	-0.100
AT HOME	0.125*	1.71	0.050	0.119	1.60	0.047	0.128*	1.71	0.051
STUDENT	0.021	0.22	0.009	0.082	0.73	0.033	0.073	0.64	0.029
RETIRED	0.104	1.16	0.041	0.098	1.09	0.039	0.113	1.24	0.045
OTHER	0.064	0.24	0.026	0.077	0.29	0.031	0.097	0.39	0.039

e) Religiosity

CHURCH ATTENDANCE	0.073***	6.47	0.029	0.072***	6.24	0.028	0.065***	5.58	0.026
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f) Time

WEST 97	0.038	0.79	0.015	0.102*	1.94	0.040	0.134**	2.52	0.053
WEST 99	0.299***	5.52	0.118	0.327***	5.93	0.130	0.336***	6.03	0.133

g) Trust

TRUST IN THE LEGAL SYSTEM/JUSTICE							0.177***	6.13	0.070
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Number of observations	3923		3799		3765
Prob > chi2	0.000		0.000		0.000

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, LOWEST CLASS, WESTERN 90. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect highest tax morale score (3).

Table 4*Tax Morale Development in Germany (1990, 1997, 1999)*

<i>WEIGHTED ORDERED PROBIT</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg. Effects</i>
<i>INDEPENDENT V.</i>	<i>1c</i>			<i>2c</i>			<i>3c</i>		
a) Demographic Factors									
AGE 30-39	0.076	1.48	0.030	0.085	1.64	0.034	0.084	1.60	0.033
AGE 40-49	0.180***	3.21	0.071	0.182***	3.22	0.072	0.192***	3.40	0.076
AGE 50-59	0.292***	4.90	0.115	0.286***	4.75	0.113	0.287***	4.74	0.113
AGE 60-69	0.427***	5.11	0.167	0.426***	5.06	0.166	0.410***	4.82	0.160
AGE 70+	0.430***	4.49	0.167	0.426***	4.43	0.166	0.394***	4.05	0.154
FEMALE	0.196***	5.65	0.078	0.186***	5.26	0.074	0.186***	5.21	0.074
EDUCATION				-0.016***	-3.82	-0.006	-0.015***	-3.76	-0.006
b) Economic Variable									
UPPER CLASS	-0.062	-1.21	-0.025	0.0001	0.00	0.00003	-0.022	-0.40	-0.009
MIDDLE CLASS	-0.076*	-1.72	-0.030	-0.046	-1.02	-0.018	-0.055	-1.20	-0.022
c) Marital Status									
MARRIED	0.157***	3.56	0.063	0.141***	3.13	0.056	0.125***	2.74	0.050
DIVORCED	0.143*	1.93	0.057	0.133*	1.77	0.053	0.131*	1.73	0.052
SEPARATED	0.052	0.31	0.021	0.059	0.34	0.023	0.064	0.37	0.025
WIDOWED	0.155**	2.09	0.062	0.137*	1.83	0.055	0.125	1.64	0.050
d) Employment Status									
PART TIME EMPLOYED	-0.034	-0.55	-0.014	-0.033	-0.52	-0.013	-0.036	-0.57	-0.015
SELFEMPLOYED	0.007	0.07	0.003	0.004	0.04	0.002	0.015	0.15	0.006
UNEMPLOYED	-0.130*	-1.80	-0.052	-0.137*	-1.90	-0.055	-0.123*	-1.69	-0.049
AT HOME	0.113*	1.76	0.045	0.106	1.65	0.042	0.115*	1.77	0.046
STUDENT	0.044	0.53	0.018	0.129	1.34	0.051	0.110	1.13	0.044
RETIRED	0.147**	2.03	0.058	0.144**	1.98	0.057	0.159**	2.16	0.063
OTHER	0.167	0.96	0.066	0.180	1.01	0.071	0.186	1.10	0.074
e) Religiosity									
CHURCH ATTENDANCE	0.059***	6.59	0.023	0.058***	6.40	0.023	0.053***	5.82	0.021
f) Time									
WEST 90	-0.755***	-17.09	-0.293	-0.763***	-17.13	-0.296	-0.827***	-18.24	-0.320
WEST 97	-0.715***	-13.28	-0.270	-0.665***	-11.91	-0.254	-0.703***	-12.48	-0.266
EAST 97	-0.384***	-6.89	-0.151	-0.317***	-5.42	-0.125	-0.305***	-5.17	-0.121
WEST 99	-0.471***	-8.21	-0.185	-0.454***	-7.85	-0.179	-0.510***	-8.70	-0.200
EAST 99	-0.298***	-4.86	-0.117	-0.272***	-4.38	-0.108	-0.306***	-4.88	-0.121
g) Trust									
TRUST IN THE LEGAL SYSTEM/JUSTICE							0.164***	7.44	0.066
Number of observations	7055			6884			6811		
Prob > chi2	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, LOWEST CLASS, EASTERN 90. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect highest tax morale score (3)

The results for the whole German sample (*Table 4*) support the results obtained for each part of Germany. Age, marital status, sex and education have the expected effects, but they are more pronounced than before.

Income and employment status are more or less insignificant. Religiosity and trust in the legal system raise tax morale significantly. The most interesting effects are observed for the regional and time dummies. The estimation results strongly support the descriptive evidence and the results from the Mann-Whitney test. Tax morale is on average significantly lower in West Germany than in East Germany. However, East and West Germany appear to converge in their tax morale levels. The estimated differences between East and West decrease over time as can be seen when focusing on the marginal effects. Such a convergence can however only be identified more exactly when we turn to the single cross sections. Deterrence measures are also not included explicitly. However, the findings suggest that the time dummies have a particular deterrence connotation. While deterrence slowly increased between 1990 and 1997, the slopes of the deterrence curves became steeper in the following years and declined afterwards. This result is consistent with the theories that suggest a positive correlation between deterrence and tax morale and tax compliance. Accordingly, we should thus observe an increase in tax morale in 1999 compared to the two other years.

4.3. Multivariate Analysis: Cross Sections in Different Years

When analyzing the cross section results for the single years, it is possible to include additional variables that are not available for the whole sample. For example, income instead of the dummy variables capturing economic status could be included in the cross section analysis for 1999. In addition, a variable measuring perceived tax evasion (of the other taxpayers) is included in the 1999 cross section. This variable captures the question: According to you, how many of your compatriots cheat on taxes if they have the chance (4 = almost all, 1 = almost none)? It could be expected that tax morale decreases if people perceive that tax evasion is common. On the other hand if people believe that others are honest their willingness to pay taxes increases. Thus, the extent to which others are perceived to contribute triggers more or less cooperation and systematically influences the willingness to contribute (Frey and Torgler 2007). The results in *Table 5* reveal that while income does not have any significant effect on tax morale, perceived tax evasion has the expected negative effect and is highly significant. It is interesting to note however that the general pattern of results for socio-demographic and economic effects reported in the section before does not show up in 1999. This holds for age, sex or religiosity while trust in the justice of the system keeps its significantly positive effect on tax morale. Most interestingly, East and West German tax morale do not prove to be significantly different from each other.

This is still different for the years 1997 and 1990. In both years, tax morale is significantly lower in West Germany than in East Germany with larger quantitative differences in 1990, as can be seen when looking at the marginal effects. Both sets of estimation results, in *Table 6* for 1997 and in *Table 7* for 1990, exhibit the pattern of results for the socio-demographic variables reported before for the full sample. In 1997, it is possible to additionally include a variable which captures perceived corruption. It displays the answers to the question: How widespread do you think bribe taking and corruption is in this country (1 almost no public officials are engaged in it, to 4 almost all public officials are engaged in it)? It is expected that a higher perceived size of corruption crowds out the public spirit, which reduces tax morale. Furthermore, the variable trust in government is available

and has been included. Perceived corruption has the expected negative sign and is highly significant. Trust in government has the expected positive impact on tax morale and is also highly significant. In each of the years analyzed, trust in the legal system has a statistically significant and positive impact on tax morale.

Summarizing these results, there is significantly lower tax morale in West Germany as compared to East Germany for the whole sample of individuals and the years 1990, 1997 and 1999. However, East German tax morale converges to the West German one in 1999 such that no significant differences between both countries remain any more. These differences are robust to the inclusion of standard socio-demographic and economic characteristics of the respondents, but also to variables like religiosity, trust in government and the legal system, perceived tax evasion or corruption which shape social norms and thus tax morale. It turns out that perceived tax evasion has a significantly negative effect on tax morale. Thus, the results indicate that hypotheses 1 and 2 cannot be rejected.

Table 5
Determinants of Tax Morale in 1999

DEPENDENT VARIABLE	Coeff.	z-Stat	Marg. Effects	Coeff.	z-Stat	Marg. Effects	Coeff.	z-Stat	Marg. Effects	Coeff.	z-Stat	Marg. Effects
ORDERED LOGIT												
<i>Demographic Factors</i>												
AGE 30-39	0.149	1.03	0.058	0.130	0.88	0.051	0.270	1.65	0.105	0.248	1.49	0.097
AGE 40-49	0.320**	2.03	0.122	0.324**	2.02	0.124	0.306*	1.71	0.118	0.311*	1.71	0.121
AGE 50-59	0.321*	1.83	0.122	0.308*	1.72	0.117	0.283	1.44	0.110	0.269	1.34	0.104
AGE 60-69	0.327	1.50	0.124	0.260	1.17	0.100	0.431*	1.74	0.164	0.390	1.55	0.150
AGE 70+	0.313	1.31	0.119	0.241	0.98	0.092	0.536**	1.99	0.201	0.492*	1.80	0.186
MALE	0.090	1.08	0.035	0.099	1.16	0.039	0.053	0.56	0.021	0.064	0.66	0.025
EDUCATION	0.010	1.05	0.004	0.010	1.04	0.004	0.008	0.76	0.003	0.008	0.76	0.003
<i>Economic Variable</i>												
INCOME PER CLASS	0.037	0.26	0.015	0.026	0.18	0.010						
MIDDLE CLASS	0.020	0.24	0.008	0.024	0.29	0.009						
INCOME							0.023	0.82	0.009	0.026	0.91	0.010
<i>Marital Status</i>												
MARRIED	-0.189	-1.35	-0.074	-0.270	-0.93	-0.105	-0.244	-0.72	-0.096	-0.234	-0.70	-0.092
DIVORCED	-0.114	-0.64	-0.045	-0.214	-0.68	-0.085	0.056	0.16	0.022	0.049	0.14	0.020
SEPARATED	0.070	0.21	0.027	-0.067	-0.21	-0.026	0.003	0.01	0.001	0.010	0.03	0.004
WIDOWED	0.182	1.25	0.070	0.170	1.14	0.066	0.265	1.48	0.102	0.244	1.33	0.095
<i>Employment Status</i>												
FULL TIME EMPLOYED	0.306	1.62	0.116	0.305	1.62	0.115	0.161	0.54	0.063	0.148	0.50	0.058
UNEMPLOYED	-0.221	-1.62	-0.088	-0.183	-1.33	-0.072	-0.194	-1.39	-0.077	-0.149	-1.00	-0.059
PART TIME EMPLOYED	-0.215	-1.18	-0.085	-0.292	-0.95	-0.116	-0.288	-0.82	-0.114	-0.272	-0.70	-0.108
SELF EMPLOYED	0.372**	2.39	0.140	0.377**	2.40	0.142	0.468***	2.77	0.177	0.465***	2.75	0.176
STUDENT	0.211	1.03	0.081	0.178	0.86	0.069	0.154	0.67	0.060	0.140	0.60	0.055
RETIRED	0.319*	1.82	0.122	0.367**	2.05	0.140	0.252	1.25	0.099	0.279	1.36	0.109
OTHER	0.106	0.42	0.041	0.106	0.44	0.041	-0.230	-0.72	-0.092	-0.216	-0.71	-0.086
<i>Religiosity</i>												
CHURCH ATTENDANCE	-0.010	-0.45	-0.004	-0.016	-0.70	-0.006	-0.020	-0.78	-0.008	-0.025	-0.94	-0.010
<i>Culture</i>												
EASTERN 99	-0.097	-1.31	-0.038	-0.114	-1.53	-0.044	-0.009	-0.11	-0.004	-0.022	-0.27	-0.009
<i>Perceived Tax Evasion/Trust</i>												
PERCEIVED TAX EVASION	-0.303***	-5.87	-0.119	-0.279***	-5.32	-0.109	-0.449***	-7.61	-0.178	-0.423***	-7.01	-0.168
TRUST IN THE JUSTICE SYSTEM				0.136***	2.60	0.053				0.106*	1.83	0.042
Number of observations	1831			1786			1461			1426		
Prob > chi2	0.000			0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, EASTERN 99. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

Table 6
Determinants of Tax Morale in 1997

<i>WEIGHTED ORDERED</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>PROBIT</i>			<i>Effects</i>			<i>Effects</i>			<i>Effects</i>
<i>INDEPENDENT V.</i>									
a) Demographic Factors									
AGE 30-39	0.090	0.94	0.036	0.110	1.13	0.044	0.089	0.92	0.035
AGE 40-49	0.152	1.41	0.060	0.176	1.61	0.070	0.153	1.41	0.061
AGE 50-59	0.260**	2.26	0.103	0.271**	2.32	0.107	0.265**	2.29	0.105
AGE 60-69	0.499***	2.75	0.194	0.518***	2.82	0.201	0.481***	2.65	0.188
AGE 70+	0.354*	1.83	0.140	0.347*	1.77	0.137	0.342*	1.76	0.135
FEMALE	0.115*	1.69	0.046	0.121*	1.76	0.048	0.119*	1.74	0.047
EDUCATION	-0.022***	-4.24	-0.009	-0.021***	-3.99	-0.008	-0.022***	-4.17	-0.009
b) Economic Variable									
UPPER CLASS	-0.065	-0.74	-0.026	-0.091	-1.02	-0.036	-0.082	-0.92	-0.033
MIDDLE CLASS	-0.176**	-2.30	-0.070	-0.194**	-2.50	-0.077	-0.185**	-2.40	-0.074
c) Marital Status									
MARRIED	0.060	0.74	0.024	0.044	0.54	0.017	0.051	0.63	0.020
DIVORCED	0.105	0.79	0.042	0.104	0.77	0.041	0.095	0.71	0.038
SEPARATED	0.007	0.03	0.003	0.017	0.06	0.007	-0.006	-0.02	-0.003
WIDOWED	-0.005	-0.03	-0.002	-0.002	-0.02	-0.001	-0.006	-0.04	-0.002
d) Employment Status									
PART TIME EMPLOYED	0.062	0.56	0.025	0.025	0.22	0.010	0.058	0.52	0.023
SELFEMPLOYED	-0.488**	-2.38	-0.187	-0.487**	-2.39	-0.186	-0.476**	-2.31	-0.182
UNEMPLOYED	0.094	0.86	0.037	0.126	1.14	0.050	0.096	0.87	0.038
AT HOME	0.100	0.78	0.040	0.091	0.71	0.036	0.096	0.76	0.038
STUDENT	-0.139	-0.64	-0.055	-0.049	-0.22	-0.019	-0.134	-0.60	-0.053
RETIRED	0.324**	2.31	0.128	0.333**	2.36	0.132	0.346**	2.48	0.137
OTHER	0.435*	1.70	0.169	0.467*	1.79	0.181	0.440*	1.69	0.171
e) Religiosity									
CHURCH ATTENDANCE	0.073***	4.10	0.029	0.064***	3.48	0.025	0.072***	4.05	0.029
f) Culture									
WEST 97	-0.336***	-4.89	-0.133	-0.330***	-4.77	-0.131	-0.367***	-5.21	-0.145
g) Trust and Corruption									
PERCEIVED CORRUPTION	-0.154***	-3.38	-0.061	-0.135***	-2.88	-0.054	-0.132***	-2.84	-0.053
TRUST IN THE GOVERNMENT				0.130***	2.89	0.052			
TRUST IN THE LEGAL SYS.							0.102**	2.27	0.041
Number of observations	1614			1588			1600		
Prob > chi2	0.000			0.000			0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, LOWEST CLASS, EASTERN 97. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3). No weighting variable required.

Table 7
Determinants of Tax Morale in 1990

<i>WEIGHTED ORDERED</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<i>PROBIT</i>			<i>Effects</i>
<i>INDEPENDENT V.</i>			
<i>a) Demographic Factors</i>			
AGE 30-39	0.070	1.02	0.028
AGE 40-49	0.136*	1.83	0.054
AGE 50-59	0.269***	3.44	0.107
AGE 60-69	0.459***	4.14	0.180
AGE 70+	0.478***	3.69	0.187
FEMALE	0.266***	5.45	0.106
EDUCATION	-0.033***	-3.30	-0.013
<i>b) Economic Variable</i>			
UPPER CLASS	-0.021	-0.23	-0.008
MIDDLE CLASS	-0.060	-0.75	-0.024
<i>c) Marital Status</i>			
MARRIED	0.191***	3.14	0.076
DIVORCED	0.209*	1.81	0.083
SEPARATED	0.037	0.12	0.015
WIDOWED	0.151	1.45	0.060
<i>d) Employment Status</i>			
PART TIME EMPLOYED	-0.167*	-1.93	-0.066
SELFEMPLOYED	-0.022	-0.16	-0.009
UNEMPLOYED	-0.267**	-1.97	-0.105
AT HOME	-0.069	-0.82	-0.028
STUDENT	0.068	0.58	0.027
RETIRED	-0.035	-0.34	-0.014
<i>e) Religiosity</i>			
CHURCH ATTENDANCE	0.074***	6.19	0.029
<i>f) Culture</i>			
WEST 90	-0.837***	-16.82	-0.322
<i>g) Trust</i>			
TRUST IN THE LEGAL SYSTEM	0.182***	6.29	0.073
Number of observations	3330		
Prob > chi2	0.000		

Notes: Dependent variable: tax morale on a four point scale. In the reference group are AGE < 30, MAN, SINGLE, FULL TIME EMPLOYED, LOWEST CLASS, EASTERN 97. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01. Marginal effect = highest tax morale score (3).

V. DISCUSSION OF THE RESULTS

The results support the argument that a social learning process has occurred. The first two hypotheses cannot be rejected. The convergence process has been driven by an East German tax morale convergence to the West German one. The regional dummy variables could be either interpreted as capturing cultural differences between East and West Germany, but given path dependencies, they could also reflect the differences in both deterrence experiences and the exposure to state coercion in the two parts of Germany. It could thus be conjectured that tax morale in East Germany is higher than in West Germany, at least in 1990. As the Iron Curtain fell, former GDR citizens became exposed to the West German system including the social welfare state, the tax system and the whole set of formal and informal rules. As discussed, deterrence, in particular the probability of detection, was higher in East than in West Germany before unification. Moreover, the opportunities for tax evasion increased after unification due to the market economy and tighter limitations for criminal investigations by the state. Before, activities in the official, planned economy were highly regulated and additional income earned could not easily be used for additional consumption. With lower costs and higher benefits of tax evasion, tax morale (if interpreted as the flip side of the same coin) decreased. The slowness of this decay in tax morale could be attributed to path dependencies: East Germans needed to get accustomed to the West German way of life. Kasper and Streit (1999) indeed argue that East Germans had to unlearn the old institutions and to learn new ones, which takes time and practice.

In addition, it should be noted that an important aim of the GDR regime was the adherence to norms. The regime served as norm entrepreneur. The East German regime tried to integrate the population into its structure in order to exert full control (e.g., by mass organizations). Interpreting their findings, Mummert and Schneider (2002) for example point out that living in a totalitarian state for many years had led to a strong subordination under state authority. People gradually internalized norms they were forced to respect for years. Once norms are internalized, a person feels guilty when not acting according to them. Thus, people develop a preference for not violating norms (Posner 2000a, b). Polinsky and Shavell (2000) argue that social norms can be seen as a general alternative to law enforcement in channeling individuals' behavior. The violation of social norms has consequences like internal sanctions (guilt, remorse) or external legal and social sanctions as gossip and ostracism. In support of such arguments, Paldam and Svendsen (2001, p. 21) cite Bulat Okudzhava who states in 1989: "During the past 70 years, a new man has been created who is obedient and easily frightened. What has been created over the decades cannot be undone in a day". Support for the argument that norms are learned, may be found when observing tax morale to decrease in the East after unification, but to increase with age as older individuals were exposed for a longer time to an environment where norm adherence was important. In a dictatorship there is the intention to control and thus achieve an atomization of individual human relationships (see Wintrobe 1998). Paldam and Svendsen (2001) argue that a dictatorship such as the Communist one created conditions that favor the building of negative social capital, which may act as a brake on economic development as soon as the dictatorship is abolished.

However, we cannot exclude that findings are free of any noise. Citizens of the new Länder may have viewed the unification process with enthusiasm, embracing a new situation. East Germany expected that the West would take care of it and would help it quickly recover economically so that a fast economic convergence would result. In addition, the possibilities for participating in democratic decision-making processes and thus co-determining fiscal policy outcomes have certainly contributed to the higher tax morale in East Germany. Tyler (1990) emphasized that the perception of procedural fairness is so important in ensuring compliance with the law. This view is somewhat surprisingly corroborated by experimental evidence on public good and solidarity games in East and West Germany in which the environmental conditions are fully controlled: Ockenfels and Weimann (1999) report significantly less cooperative behavior of East Germans as compared to their fellow citizens from the West casting doubts on the argument of an *innately* higher willingness to cooperate in the East or an internalization of the norms imposed on them by a state nomenclature. The effect we identify for tax morale is thus rather the result of the different environment directly after unification.

As East Germans became disappointed by their situations, their initial tax morale was significantly eroded, converging quickly to the West German level. For example, by 1997 the East German GDP per capita was with 57% of the West German GDP (still relatively low), the unemployment rate was twice as high, and wages were around 75% of those in the West (Hunt 2000). Our results are in line with recent results on black activities in Germany. While Mummert and Schneider (2001) report a significantly lower share of black market activities in East Germany in 1995, Feld and Larsen (2005) find significantly less black market activities in West Germany in 2004. If this interpretation of the facts is correct, deterrence plays a subordinate role for tax morale. Other factors like the exchange relationship between citizens and the state would be more important. The clear convergence process over time and the strong reaction of both regions in the second part of the 1990s where deterrence has strongly increased in Germany and the convergence process was already finishing may indicate deterrence shapes tax morale. There is a steady moderate increase of deterrence in unified Germany since the beginning of the nineties until 1997 that subsequently intensified. Thus, at best weak evidence is found supporting Hypotheses 3 and 4.

In addition one can argue that unification may have been seen as a shock for West German tax morale. In order to find out whether this is the case we use tax morale data from the 1981 WVS and compare them with those from 1990, employing the same weighted ordered probit model as before. We find that tax morale in Western Germany was significantly lower in 1990 than in 1981. However, with marginal effects of around 10 percentage points, the quantitative effects are far below the East German values in 1990 (three times lower). Thus, the results could indicate that West Germans simply capitalized to a certain extent the expected costs of unification and it is unclear whether the subsequent tax increases precipitated the lower tax morale, or whether they anticipated a loosening of the positive exchange relationship between the state and its West German citizens. For example, in the period from 1991 until 1995, around \$440 billion US were transferred from West to East (around \$26000 for every inhabitant in the East) (Kasper and Streit 1999).

VI. CONCLUSION

In this paper, we have explored the differences in tax morale between East and West Germany and the convergence of morale across time using a social learning framework. Social learning models help to predict fads, imitations, criminal behavior, fashion trends and behavior in business and politics. The literature on tax compliance has failed to explore social learning, herding behavior or convergence processes in general. This paper addresses this shortcoming by exploring the unification process in Germany using three World Values Survey/European Values Survey waves between 1990 and 1999. German unification constitutes a quasi-natural experiment which is interesting for the analysis of tax morale over time and the exploration of a social learning process. As mentioned, many factors can be controlled (e.g., a common language, similar education systems and a shared cultural and political history prior to the separation after the Second World War). Our findings indicate that social learning models help to predict the tax morale convergence process after unification in Germany. The models led to the hypotheses that tax morale values between East and West German taxpayers would converge over time and that the convergence process is driven by a tax morale change among East German taxpayers. Our results indicate that while tax morale was significantly higher in East Germany than in West Germany in 1990, both regions do not differ significantly in their tax morale levels in 1999. This result holds whether the descriptive analysis, non-parametric tests or a differentiated multivariate analysis is conducted. Though these regional and time differences appear to be of transitory nature, religiosity and trust in the legal system/ in justice of the system are secular determinants of tax morale. Within just nine years after unification, tax morale values strongly converged, due in particular to a significant change in the level of tax morale in the East. Nevertheless, some alternative theories can be suggested as to what may have also influenced the convergence process. Differences between both parts of Germany may result from the perception of the exchange relationship between the state and its citizens. While East German citizens may have embraced the Western economic model initially and expected to gain from its introduction in East Germany, the West German citizens anticipated the high costs of German unification (and subsequent) tax increases and capitalized them in lower tax morale. In general, the results indicate that an increase of opportunities to evade taxes and deterrence policy changes can affect tax morale. East Germany's deterrence was higher before the unification of Germany and the deterrence policy of the German federal government has steadily increased deterrence between 1990 and 1997. Intensification of deterrence policy thereafter seems to have affected tax morale among East and West Germans.

In sum this paper contributes to the literature that tries to explain how norms arise, are maintained and changed, by focusing on the unification of Germany as an important historical event. More (empirical) evidence is required to understand social learning and convergence process. Our results indicate the usefulness of going beyond the traditional models of tax evasion stressing that individuals do not act as isolated individuals playing a game against nature. The social context, in which tax compliance takes place, has to be considered in order to fully understand causes and consequences of tax compliance.

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APPENDIX

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance (4=never and 1=always)
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deduction.</p> <p>West Germany</p> <ol style="list-style-type: none"> 1. Below 2.000 DM per month 2. 2.000-2.999 DM 3. 3.000-3.999 DM 4. 4.000-4.499 DM 5. 4.500-4.999 DM 6. 5.000-5.499 DM 7. 5.500-5.999 DM 8. 6.000-6.999 DM 9. 7.000-7.999 DM 10. 8.000 DM and over <p>East Germany</p> <ol style="list-style-type: none"> 1. Under 1.000 Marks per month 2. 1.000-1.299 Marks 3. 1.300-1.599 4. 1.600-1.799 5. 1.800-1.999 6. 2.000-2.199 7. 2.200-2.499 8. 2.500-2.799 9. 2.800-3.199 10. 3.200 Marks or more per month <p>West and East Germany 1999</p> <ol style="list-style-type: none"> 1 DE: unter 1.000 Dmarks per month 2 DE: 1.000-2.000 DMarks 3 DE: 2.000-3.000 DMarks 4 DE: 3.000-4.000 DMarks 5 DE: 4.000-5.000 DMarks 6 DE: 5.000-6.000 DMarks 7 DE: 6.000-7.000 DMarks 8 DE: 7.000-8.000 DMarks 9 DE: 8.000-9.000 DMarks 10 DE: 9.000 und mehr DMarks
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <p>WVS 1990/1997</p> <ol style="list-style-type: none"> 1. Upper class 2. Upper middle class 3. Lower middle class 4. Working class 5. Lower class <p>EVS 1999</p>

	<ol style="list-style-type: none"> 1. Upper, upper middle class 2. Middle, non-manual workers 3. Manuel workers, -skilled, -semi-skilled 4. Manuel workers, -unskilled, unemployed
EDUCATION	At what age did you or will you complete your full time education, either at school or at an institution of higher education? Please exclude apprenticeships
RELIGIOSITY (CHURCH ATTENDANCE)	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never)
MARITAL STATUS	<p>WVS</p> <ol style="list-style-type: none"> 1. married 2. living together 3. divorced 4. separate 5. single <p>EVS</p> <ol style="list-style-type: none"> 1. married 2. divorced 3. separate 4. widowed 5. never married

